

Towing Tips

All you need to know about towing!

Whilst we have made every effort to ensure the information on this page is accurate, we cannot be liable for any of the consequences of using it.

Towing to and from the circuit is an integral part of competing in motor racing. These notes on towing are included to help you travel to and from the circuit safely and legally.

Towing Weights

Loaded race car trailers can be very heavy, and there are legal limits on the weight that you can tow with a particular vehicle. For most modern cars the manufacturer publishes a maximum recommended towing weight. It is important not to exceed this weight, as to do so could invalidate your insurance. However these weights can be surprisingly low. For a typical family saloon the maximum towing weight is likely to be in the 1200 to 1400 kg bracket. Small family saloons are considerably less. It is a sobering thought that many racecar trailers are rated at 2 tonnes gross, and the only car we could find (without moving into the Jaguar XJ/ BMW 530 bracket) rated at that rate is the Ford Scorpio Estate!

How to understand towing weights

The chassis plate of a vehicle defines the weight which it is allowed to tow. Here's an example of a "twin-wheel" Transit Van chassis plate (example only):

Vin No:	SAXXBABF.....
GTW:	4000
GVW:	3500
P1:	1600
P2:	2150

GTW

Gross Train Weight (applies only when towing a trailer) is the maximum total vehicle weight, trailer weight, driver, passengers and any other items contained within the vehicle or trailer.

GVW

Gross Vehicle Weight. Total weight of towing vehicle, driver, passengers, everything either inside, on roof rack, etc.

P1

Total maximum weight on the front axle.

P2

Total maximum weight on the rear axle. All of the weights on the chassis plate are maximums and by law **MUST NOT** be exceeded. Note that the 2 axle weights add up to more than the GVW, this is to give you a little leeway in the position of the centre of gravity of the vehicle. If your van, loaded, before you hook up your trailer, weighs 3000kg (a guess), then you have only 1000kg left before you reach the maximum GTW. If your trailer weighs 500kg (10 cwt) then you are left with only 500kg for the contents of the trailer – not a lot, really.

Trailer Maximum Weights

Type 01: Unbraked trailers – max. 750kg gross trailer weight or half the towing vehicle's kerb weight – whichever is less.

Type 02: Trailers on overrun brakes – max. 3500kg gross trailer weight

1982 regulations demand that all trailers, including unbraked ones, must be clearly marked with their maximum gross weight in kg. This may be checked at any time by the police at a weighbridge. Since 1st January 1997, all unbraked trailer plates must show the year of manufacture. To comply with the D.o.T. Code of Practice for the recall of defective trailers less than 3500kg G.V.W. it is desirable that a trailer should carry a manufacturer's plate clearly showing.

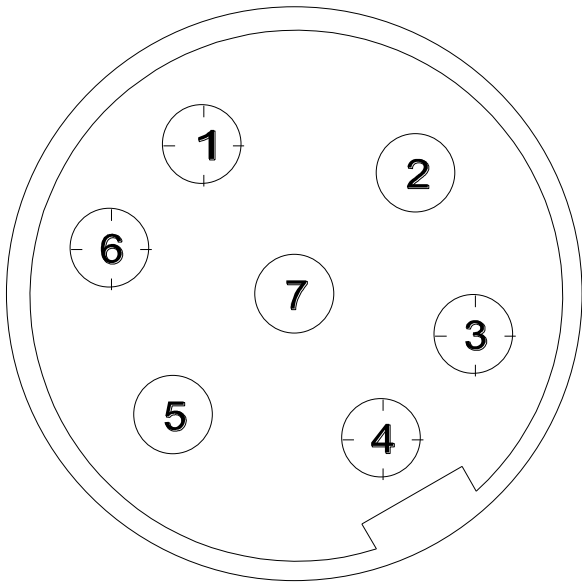
- ✓ Manufacturers name and address chassis or serial number and model number
- ✓ Number of axles
- ✓ Maximum weight per axle
- ✓ Nose weight of coupling
- ✓ Maximum gross weight (GVW)
- ✓ Date of manufacture

Trailer Wiring Information

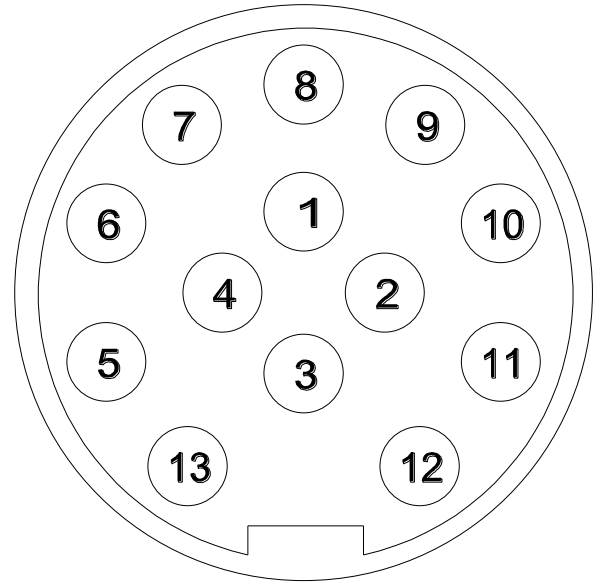
Sockets should be wired using both the numbers and the colours to avoid confusion later. The above diagrams show the pins from the **rear of the socket**; the rear of the plugs will mirrored left to right (eg. on the 7 pin socket, pins 2 & 3 will swap place with 5 & 6).

The **12N** wiring is used to provide the legally required trailer wiring. The **12S** wiring is the supplementary socket, used mainly for caravans and their appliances. The **12S** cable and plug are usually grey, and the **12S** socket normally has a white or grey cover. The **13 pin Euro** socket provides the functions of both sets of wiring.

**12N Plug / Socket
12S Plug / Socket**



13 Pin Euro Socket



Pin No.	Cable Colour	13 Pin Euro Socket	12N Plug / Socket	12S Plug / Socket
1	Yellow		Left Hand Indicator	Reverse (notes 2, 6)
2	Blue		Rear Fog Lamp (notes 1)	Aux. Charing (notes 2, 4)
3	White		Earth (notes 3)	
4	Green		Right Indicator	Aux. Power (notes 2)
5	Brown		Right Hand Tail/Side & Number Plate	Spare (notes 2)
6	Red		Stop/Brake Lamps	Refrigerator (notes 2, 4)
7	Black		Right Hand Tail Lamps	Spare/Earth (notes 2, 5)
8	Yellow	Reverse (notes 2, 6)	- N/A -	- N/A -
9	Green	Aux. Power (notes 2)	- N/A -	- N/A -
10	Blue	Aux. Charging (notes 2, 4)	- N/A -	- N/A -
11	Red	Refrigerator (notes 2, 4)	- N/A -	- N/A -
12	Brown	Spare (notes 2)	- N/A -	- N/A -
13	White	Earth (notes 3)	- N/A -	- N/A -

Notes:

1. If a 12N socket has an 8th pin, then this is used in conjunction as a fog light cutout. The feed to cars integral foglight must be broken and taken to pin 2, and then pin 8 should be used to feed the cars integral foglight. This will inhibit the cars foglight when a trailer is connected.
2. The power feeds to the supplementary wiring should all be capable of carrying 16 amps.
3. The earth feed to the supplementary wiring should be capable of 35 amps.
4. The auxiliary charging circuit and the refrigerator power circuit should be controlled by a relay to only provide power to the socket whilst the engine is running. This is to prevent the trailer battery providing starting power to the engine.
5. As of 1999, the refrigerator requires a separate earth. This is accomplished using the 12S wiring pin 7, which should be connected to the vehicle chassis.
6. The reverse feed can be used to power a reversing light attached to the trailer, and/or a reverse brake system.

E Mark rules relating to tow bars

If you are considering fitting a towbar to a vehicle first registered on or after the 1st August 1998, then the tow bar must be E-marked.

Category N:

Power-driven vehicles having at least four wheels or having three wheels when the maximum weight exceeds 1 tonne, and used for the carriage of goods.

- N1** Goods vehicles with a maximum weight of 3,5 tonnes.
- N2** Goods vehicles with a maximum weight over 3,5 tonnes but not over 12 tonnes.
- N3** Goods vehicles with a maximum weight over 12 tonnes.

Category O:

Trailers (including semi-trailers)

- O1** Single-axled trailers, other than semi-trailers, with a maximum weight of up to 0,75 tonne.
- O2** Trailers with a maximum weight of up to 3,5 tonnes, not in Category 01.
- O3** Trailers with a maximum weight over 3,5 tonnes, but not over 10 tonnes.
- O4** Trailers with a maximum weight over 10 tonnes.

Category M:

Motor driven vehicles, used for the carriage of passengers with:

At least four wheels or With three wheels and a maximum weight over 1 tonne (articulated vehicles of two non-separable, articulated units shall be considered as single vehicles)

- M1** Passenger vehicles with up to eight seats in addition to the driver's seat.
- M2** Passenger vehicles with more than eight seats in addition to the driver's seat, and a maximum weight of 5 tonnes.
- M3** Passenger vehicles with more than eight seats in addition to the driver's seat, and a maximum weight over 5 tonnes.

Driving With a Trailer

Speed limits:

Always keep to the legal speed limit for the road you are using.

Speed limits for cars towing caravans or trailers.

- 30mph limit applies on all roads with street lighting unless signs show otherwise.
- 50mph applies on single carriageways unless signs show otherwise.
- 60mph applies on dual carriageways and motorways

It should be remembered that you must not travel in the right-hand lane of a motorway, with three lanes or more, if you are driving a vehicle drawing a trailer.

Drive within your outfit's capabilities:

- Always drive at a speed that is well within your capabilities, and to the road and weather conditions that prevail at the time.
- If your trailer begins to snake or swerve, ease off the accelerator and reduce speed gently. (This can happen if you are driving too fast or the load in the trailer is wrongly positioned).
- Do not brake sharply on a bend, (this could cause a possible jack-knife situation). Reduce speed before the bend and take the appropriate gear for the speed you are doing. Then gently accelerate out of the bend.

Reversing with a Trailer

Before reversing, get out of the vehicle and check that all is clear to the rear before making the manoeuvre.

Be on the look out for children and pedestrians. If possible, get someone to watch while the manoeuvre is made.

WARNING!! Never reverse a trailer without checking behind because of the huge blind spot. Ideally, have someone see you back, especially in crowded places. Reversing a trailer is a skill that can be mastered with a little perseverance by anyone who has learned the basic theory. Find somewhere with plenty of space and keep trying until you get it right. It helps to have someone who knows how to do it to tell you where you are going wrong.

Maximum Dimensions

Towing vehicle under 3500kg GVW

Length (excluding the coupling and drawbar)	7.0 metres
Width Maximum	2.3 metres

Towing vehicle over 3500kg GVW

Length (excluding the coupling and drawbar)	12 metres if at least 4 wheels
Width Maximum	2.55 metres
Length of towing vehicle and trailer combined	18 metres
Maximum overhang of load from rear of trailer	3.05 metres

Marking of rear overhang

Between 1m and 2m, ensure the end is clearly visible by attaching a piece of cloth or similar. Between 2m and 3.05m, a marker board as defined in the Regulations must be fitted and illuminated at night. If the overhang is more than 3.05m, an attendant must be carried and the police must be notified 2 days before commencing the journey

“Long Vehicle” Marker Plate: Not required for light trailers.

These are a legal requirement only for trailers over 3500kg or where the towing vehicle is over 7500kg gross weight. When they are required, different plates are required depending on the length of the vehicle. Details can be found in the Road Vehicle Lighting Regulations, Schedule 18.

Loads must not project more than 305mm either side of the trailer, up to a maximum width of 2.9m.

Loads over 2.9m in width are classed as abnormal loads and the police must be notified two days before a journey commences.

Recommended maximum height:

3.0m high or 1.7 times the wheel track. (horizontal distance between centre lines of tyre treads)

There is no legal requirement, but this is an accepted guideline.

If however the height does exceed 3.0m then a notice giving the height details must be displayed in the cab of the towing vehicle. (Only buses are subject to a maximum height regulation).

Driving Licences

Summary

You must hold a full driving licence to tow anything. Most drivers who passed their test before 1 January 1997 have licence categories allowing them to drive vehicle and trailer combinations weighing up to 8.25 tonnes. With effect from 1 January 1997 the second EC Directive on Driving Licences (91/439/EEC) came into effect, affecting new drivers passing their test after that date and HGV drivers who obtained their licence after 31 December 1991. The net result is that new drivers will only be allowed to drive and tow the following combinations:

- Vehicles up to 3.5 tonnes (category B) with a 750kg trailer (4.25 tonnes total MAM).
- Category B vehicles with larger trailers i.e. > 750kg, provided that the combined MAM does not exceed 3.5 tonnes and the gross MAM of the trailer does not exceed the unladen weight of the towing vehicle. To be able to tow combinations outside this ruling requires the passing of an additional test.
- New HGV drivers and those who have passed their HGV tests since 1 January 1992 will be restricted to towing trailers up to 750kg until they pass an additional test.

Detail of the Regulation

The Motor Vehicles (Driving Licences) (Amendment) Regulations 1990 SI 1990 No 842 classifies vehicles according to either:

“Maximum authorised mass” (permitted maximum weight). Vehicles over 3,500kg MAM are classified as LARGE GOODS VEHICLES (LGV's) ? Number of seats. Vehicles having more than 8 seats (not including the drivers) are classified as PASSENGER CARRYING VEHICLES (PCV's)
Requires ADDITIONAL qualifications for people to drive LGV's and PCV's

The main non – LGV (unified) licence categories are:

Category A: Motor cycles (with or without a sidecar), including tricycles and mopeds

Category B: Motor vehicles with:

- A maximum authorised mass (MAM) not over 3,500kg
- A maximum of 8 seats (not including the driver's seat)

Trailers being towed by vehicles in this category must either:

- Be not more than 750kg MAM – making a maximum authorised Train Weight of 4,250kg
- Have a MAM which does not: – exceed the unladen weight of the towing vehicle
- Have a MAM which does not: – Have a train weight exceeding 3,500kg

Drivers of vehicles in this category wishing to tow trailers which do not comply with either of the above conditions must have a B + E entitlement.

Technical articles should be taken as advice only, if in any doubt consult a qualified mechanic or the parts supplier/manufacture.